

CLAIMS

What is claimed is :

- 5 1. A binder for electrode materials which comprises tetrafluoroethylene based polymer fine particles having an average particle size of not more than about 0.20 μm and having a standard specific gravity of not more than about 2.20, wherein a mixture prepared from said fine particles with about 17% by weight of the total mixture of an extrusion
10 coagent, when subjected to the measurement of an extrusion pressure by a rheometer, exhibits under the conditions of a draw ratio of 100 to 1 and an extrusion speed of 18 ± 2 mm/min, an extrusion pressure of not less than about 220 kg/cm^2 .
- 15 2. A binder for electrode materials as set forth in Claim 1, wherein said tetrafluoroethylene based polymer is polytetrafluoroethylene or a copolymer of tetrafluoroethylene with at least one comonomer selected from the group consisting of fluoro(alkyl vinyl ethers) represented by formula $\text{CF}_3-(\text{CF}_2)_n-\text{O}-\text{CF}=\text{CF}_2$ (where n is 0, 1, or 2),
20 hexafluoropropylene, and perfluorobutylethylene.
- 25 3. A binder for electrode materials as set forth in Claim 1, wherein said tetrafluoroethylene based polymer has an average particle size of about 0.10 to about 0.18 μm .
- 30 4. A binder for electrode materials as set forth in Claim 1, wherein said tetrafluoroethylene based polymer has a standard specific gravity of about 2.12 to about 2.19.
- 35 5. A binder for electrode materials as set forth in Claim 1, wherein said tetrafluoroethylene based polymer has an extrusion pressure of about 270 kg/cm^2 or greater.
6. A process for making an electrode comprising:
35 mixing electrode materials with a binder to form an electrode/binder mixture, said binder comprising tetrafluoroethylene based polymer fine particles having an average particle size of not more than about 0.20 μm and having a standard specific gravity of not more than about 2.20,

wherein a mixture prepared from said fine particles with about 17% by weight of the total mixture of an extrusion coagent, when subjected to the measurement of an extrusion pressure by a rheometer, exhibits under the conditions of a draw ratio of 100 to 1 and an extrusion speed of 18±2 mm/min, an extrusion pressure of not less than about 220 kg/cm²; and

5 molding said electrode/binder mixture into an electrode.

7. A process for making an electrode as set forth in Claim 6, wherein said tetrafluoroethylene based polymer is polytetrafluoroethylene or a copolymer of tetrafluoroethylene with at least one comonomer selected from the group consisting of fluoro(alkyl vinyl ethers) represented by formula CF₃-(CF₂)_n-O-CF=CF₂ (where n is 0, 1, or 2), hexafluoropropylene, and perfluorobutylethylene.
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- 15 8. A process for making an electrode as set forth in Claim 6, wherein said tetrafluoroethylene based polymer has an average particle size of about 0.10 to about 0.18 µm.
- 20 9. A process for making an electrode as set forth in Claim 6, wherein said tetrafluoroethylene based polymer has a standard specific gravity of about 2.12 to about 2.19.